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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/413,462 10/06/99 CARTIER

E 12906(YD999-

EXAMINER

CRUZ, L

ART UNIT

PAPER NUMBER

2815

DATE MAILED: 02/01/01

RICHARD L CATANIA  
SCULLY SCOTT MURPHY & PRESSEER  
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GARDEN CITY NY 11530

MMC2/0201

**Please find below and/or attached an Office communication concerning this application or proceeding.**

**Commissioner of Patents and Trademarks**

<b>Office Action Summary</b>	Application No. 09/413,462	Applicant(s) CARTIER ET AL.	
	Examiner Lourdes C. Cruz	Art Unit 2815	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 06 October 1999.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) 1-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 21-34 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☒ Claims 1-20 are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

#### Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

#### Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892)
- 16) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 18) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_.
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☒ Other: *Attached Election/Restriction*.

### DETAILED ACTION

Applicant's election without traverse of claims 21-34 is acknowledged. See attached Election/Restriction.

#### ***Claim Rejections - 35 USC § 112***

Claim 34 is rejected under 35 U.S.C. 112, -second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 34 is indefinite because it depends upon a non-elected claim.

#### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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Claims 21-23, 28, 29, <sup>30</sup>32 and 33 are rejected under 35 U.S.C. 102(b) as being anticipated by Hotta (US Patent No. 5418179).

Regarding claims 21, 28, 32 and 33, Hotta discloses a semiconductor structure comprising at least a metal silicate 113 that is formed on an insulating layer 110, said layer being formed on a Si-containing substrate and having a gate electrode containing polysilicon (**claim 33**). Although Hotta fails to give specific characteristics about said insulating layer, silicon oxide is well known in the art.

Regarding claims 22, 23, 29 and 30 (See Col. 6, lines 45+) wherein Hotta discloses a silicide layer containing Hf.

Art Unit: 2815

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 25-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hotta (US Patent No. 5418179).

Hotta discloses a semiconductor structure comprising at least a metal silicate 113 that is formed on an insulating layer 110, said layer being formed on a Si-containing substrate and having a gate electrode containing polysilicon as discussed above.

Regarding claims 25-27, the specific thickness of the claimed layers from which limitations the workable ranges of volts and capacitance density of claim 27 will depend, do not provide any critical or unexpected results to the device's operation. Rather, it is merely an obvious design choice determinable by routine experimentation. In *Aller*, the court stated, "Where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." *In re Aller*, 220 F.2d 454, 456 105 USPQ 233,235 (CCPA 1995).

Claims **24 and 31** are rejected under 35 U.S.C. 103(a) as being unpatentable over Hotta in view of Fujikawa et al. (US Patent No. 5306950).

Hotta discloses a semiconductor device with features discussed above. Although Hotta does not disclose a La silicate layer, Fujikawa does so, for the purpose of

Art Unit: 2815

lowering resistivity. It would have been obvious to combine the teachings of Fujikawa to the teachings of Hotta for the purpose of obtaining a layer that provides lower resistivity, as taught by '950.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Konishi, Courreges, and Vor et al. disclose silicide layers being disposed over dielectrics.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lourdes C. Cruz whose telephone number is 707-306-5691. The examiner can normally be reached on M-F 8:00- 4:30.

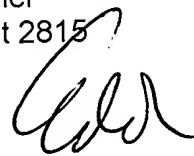
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie Lee can be reached on 703-308-1690. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.



Lourdes Cruz  
January 29, 2001

Lourdes C. Cruz  
Examiner  
Art Unit 2815

  
**LENN GILF**  
**FRONT EXAMINER**

Application/Control Number: 09/413,462  
Art Unit: 2815

Page 5

Art Unit: 2812

## DETAILED ACTION

### *Election/Restrictions*

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-20, drawn to method, classified in class 438, subclass 785.
- II. Claims 21-34, drawn to device, classified in class 257, subclass 1+.

The inventions are distinct, each from the other because of the following reasons:

Inventions *silicate gate dielectric* and *method for making the same* are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the metal silicate layer could be deposited by MOCVD.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

During a telephone conversation with Les Szivos on 2/9/2000 a provisional election was made without traverse to prosecute the invention of device, claims 21-34. Affirmation of this election must be made by applicant in replying to this Office action. Claims 1-20 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.


Art Unit: 2812


Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a petition under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Viktor Simkovic whose telephone number is 703-308-6170. The examiner can normally be reached on Mon-Fri, 8:00 - 5:30, except every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Niebling can be reached on 703-308-3325. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1782.

  
Viktor Simkovic  
February 9, 2000

  
5225-0173  
FEB 10 2000